Operation Outline for ST 1

ST 1 is a metal tank that is 20 feet tall by 12 feet diameter. The floor of the tank is slightly sloped to the center tank drain. The tank contains approximately 1500 gallons of an acid sludge consisting of a black organic sludge, a light green (acidic) crystal and a strong liquid acid. The majority of the liquid has been previously removed to totes through a valve on the tank. Additional liquids were removed by opening the man way and allowing the residual liquid to drain into a modified tote. The material was removed from each using the double diaphragm pump.

The following steps will be utilized to remove the sludge material from ST1.

Step 1: Remove residual liquids from the tank by way of the manway and pumping those liquids with a double diaphragm pump into the final disposal containers (totes or drums);

Step 2: Remove sludge from tank.

a. Remove the sludge (without entering the tank) via shovels, rakes, and other appropriate and extended reach equipment into modified totes. This material will be slurried and pumped into drums via the double diaphragm pump and/or shoveled into drums.

b. The secondary plan will be initiated should the primary plan prove to be inadequate. This plan will involve entry into the tank to remove the remaining materials from the tank. The removal of the materials will be conducted using shovels, rakes, and other appropriate and extended reach equipment into modified totes and slurry and pump into drums via double diaphragm pump and/or shovel into drums.

If a confined space entry is required to remove the remaining sludge or crystalline material. SWSES will provide staffing for the removal activities and a rescue team (including rescue team supplies).

SWSES will suggest the necessary staff to complete the confined space entry. PPE and the sludge removal equipment will be provided including the rakes and shovels. A decontamination showers will be located to rapidly decontaminate entrants. Entrants will be required to wear chemical boots

Step 3: Removal of hard to reach sludge via secondary access point.

a. If the waste material cannot be reached by the entrants during confined space entry, a secondary access point will be created by with a pneumatic nibbler. An entry hole will be cut into the tank with a drill. The nibbler will cut out a door sheet approximately 4 by 4 ft leaving tabs, so the door is still attached. Additional holes will be drilled and cut in the door plate so it can be held with the overreach forklift. When the final tabs are cut out the door will be removed using the forklift. The jagged edges will need to be covered with foam or pipe.
b. Material will be removed as in Step 2.